

Z88 EPROM

November 1989

Vol.3 No.6

Contents

Page

Club Addresses	2
Editorial	3
Newslines	5
Helpline	5
Queries, Hints & Tips	6
BASIC for Beginners Part 3	8
Software Review - Harvester Wordchip	14
Software Review - Thinkz	27
Z88 Dealer List Part 1	31
CLI Library	33
Small Ads & Swapshop	34

Club Addresses

All articles for **Z88 EPROM** and any other correspondence (**except** Software Library) should be sent to:

Z88 USERS' CLUB

68 WELLINGTON STREET

LONG EATON

NOTTINGHAM

NG10 4NG

All requests for software from the Club Software Library, (**but not** special offers), items for inclusion in the Library, and EPROMs for erasure should be sent to:

THE SOFTWARE LIBRARY

Z88 USERS' CLUB

3/8 JENNER ROAD

GUILDFORD

SURREY

GU1 3PL

Please note that the **Library** address is the one to use when sending for a list of Library programs - this list is **not** available from the main Club address. Be sure to enclose 50p for the list.

ALWAYS include your Membership Number with any correspondence. This is not just to be awkward - now the Club is growing it can be very time-consuming searching the database for a member's number. Your number is printed on the address label of each issue of **Z88 EPROM**. Please be sure to enclose a stamped-addressed envelope with anything needing a reply.

About Z88 EPROM

Z88 EPROM is now published ten times a year - one issue each month, but with no magazine in January and July. Membership of the Z88 Users' Club is by subscription to **Z88 EPROM**, which then allows the member to use the other Club services.

Editorial

This issue is the first on our new monthly schedule - a transition which I feel will inject new life into the magazine (not that the "old life" was particularly lacking in anything!).

Since the last issue I have been away on holiday, and I've returned refreshed(?) to yet another huge pile of mail! My Brother Dave kindly held the fort while I was away, processing new memberships and the like, to reduce both the scale of my huge pile of mail, and the time people had to wait for a response in my absence. Well done Dave, we all appreciate it.

While on the subject of huge piles of mail, much of my backlog is technical queries and the like. Now that we are getting more people offering Helpline service on a variety of topics, please may I ask that you write to them in preference to me, always assuming the subject of your query is covered. In this way my own workload (and backlog) of queries should diminish, allowing me more time for general administration and compiling the new monthly magazine. Please note that if you do write to me with a query, you should receive a reply in time, but please be patient. By using the Helpline you will definitely receive a reply more promptly.

You will remember that last time I apologised for the lateness of the Satellite Special. At the time of writing this I still do not have a fully working CCL satellite setup (it seems that the introduction into full scale production has been somewhat dogged by various little problems). However, I shall stick my neck out here, and say that by the time this issue reaches you, the Satellite Special will not be far behind. To this end, those of you who have not yet ordered a copy will find an advertisement for this milestone (or should that be millstone?) in satellite publishing.

While on the subject of advertising, I need to apologise for the fact that there are ten pages of ads in this issue - I generally try to restrict it to between six and eight pages in a normal 36 page issue. The problem has risen this time because of the move over to ten issues. I realised that in ten issues there will be 40% more advertising space to fill, so I'm afraid I went out enthusiastically chasing advertisers. I was a little too successful, since most wanted to advertise immediately. I expect that over the next few issues the advertising situation will stabilise, and we will be back to our normal amount.

I am very pleased with the response to the new Spares Service - the number of members who have bought spares shows that this was sorely needed. The initial rush of orders also meant that a couple of times I ran out of items - keyboards seem especially popular. My apologies to those of you who had to wait for delivery. I now have a better idea of the demand for the different items, and have modified my stock levels accordingly, so in future most spares orders should be fulfilled from stock.

Several people have written over the last few weeks commenting on the departure from CCL of Alan Boxer and Geoff Cooper, reported in last issue's Newslines. The gist was basically "is this the beginning of the end for the Z88". Obviously Alan and Geoff left CCL for reasons which are none of our business, but as I see it it certainly wasn't a case of deserting a sinking ship. In any company, large or small, there are always movements of staff at all levels. The fact that these two came so close in time was, I believe, an unfortunate coincidence. As you will see from this issue's Newslines. CCL have already appointed a new MD, and Geoff's old job has also been filled.

With the withdrawal of Dixons and Comet from the Z88 market I thought that many of you may not know who your local Z88 dealer is, or there may even be a local dealer you are not aware of. Several people have also written asking for the name of their local dealer, and in the past I have always referred them to CCL. I thought that it might be useful to print the dealer list in the magazine, thereby giving members a handy reference to all dealers countrywide.

Obviously the list is quite large, so I have split it up into several sections, the first of which is printed in this issue. I have started at the beginning of the list, which is categorised in counties in alphabetical order, so my apologies to those of you living in Wiltshire and Yorkshire, I'm afraid you will have to be patient! You may have also noticed that there is no Software Library Update in this issue - Ian will be back next month with a bumper update.

That's about it for this time. Don't forget that next month will be the first new monthly issue, which I hope to get out to you just before Christmas. However, knowing how the mail system blocks up during December, don't be too alarmed if your copy doesn't arrive until just after Christmas. I suppose if that's the case, I really ought to wish you all a very Merry Christmas now!!

Newslines

****CAMBRIDGE COMPUTER** has appointed a new Managing Director. Chris Wheeler worked formerly for the Mars Group, and brings to Cambridge a strong mix of technical and consumer marketing skills. Chris Wheeler had previously held a number of senior positions with Texas Instruments, including 3 years as discrete semiconductor products manager for Northern Europe. Before TI, he worked as an industrial engineer and product line manager for Proctor and Gamble. According to Sir Clive, "his background and impressive track-record in new business development make him an ideal appointment to ensure the continued profitable growth of Cambridge into the 1990s."

****VIC GERHARDI** of Rakewell - known to many of you for his successful Z88 Training Days - has written a book. Called **Z88 Magic**, it runs to some 300 pages, and is basically a Z88 tutorial covering all the inbuilt software, plus a plethora of hints and tips. At the time of writing publication is due on November 20th by Kuma. Price is a hefty £14.95, and if Vic obliges I hope to review it in the next issue. Contact Vic for more details on 0296 630617.

Helpline

If you have a technical query, write to one of our Helpliners listed below. Please note that you should include a stamped, addressed envelope or sufficient return postage for your reply.

CLI Files - Contact Michael Hey by post only at: 18 Woodside Road, Sandiacre, Nottingham. NG10 4GP

Z88 to Amstrad PCW Link - Please write in the first instance to: Mr A West, 16 Southway, Burgess Hill, Sussex, RH15 9ST.

zBASE, CLI and all Wordmongers products except TX & Comms software - Contact Jason Crook (ex of Wordmongers), 4 Salisbury Close, Princes Risborough, Bucks. HP17 0JF. Telephone 08444 7075. I will also write to order in zBASE.

zBASE - Help on commands and programming. I can accept info/programs on paper, EPROM, zTape cassettes or IBM disk. Contact Robin Jarvis, 27 Gloucester Road, Waterlooville, Hants PO7 7BJ.

Queries, Hints and Tips

R McClemon (2103)

One thing I have not seen mentioned anywhere is that <>TAB returns the cursor to the beginning of the line after you have been going across the columns using the TAB key. I find myself using it a lot as the enter key only returns the cursor to the beginning of the column and SHIFT/TAB only a column at a time.

Peter Bowker

ASTRO NAVIGATORS - Has anyone managed to get WHICH SIGHT? and WHICH STAR? as published in Practical Boat Owner for the Casio FX 730P to run on their Z88? I have written a program which resolves intercepts and includes a traverse to complete the plot. If anyone is interested please send SAE to 3 Elm Court, Elm Grove Road, Salisbury, Wiltshire. Patience please, I am a travelling man.

Douglas de Lacey (1276)

There is an interesting design fault in the Z88 of which even CCL seemed to be unaware, and which caused me several problems before I discovered both it and the simple remedy. The default value for <>W (column width) is set to zero. So if by accident you press <>W ENTER, the apparent result is that a whole column disappears irretrievably. The first time this happened I spent hours trying to find the column. CCL, when consulted, were unable to help. That time I wrote off the file and started again. But the remedy is very easy. Save the file as Plain Text, re-load it as Plain Text and all is well. It still strikes me as a daft default. Does anyone know if the default values can be altered?

Dennis Groning (1080)

A while ago I found the bug in the PrinterEd.

If you go to PrinterEd []E Reset to default driver <>FNEW Save this driver <>FS Go to PipeDream []P Load the driver <>FL

You can now see on lines 17 to 23 seven lines with a Y or N as the third character, a space as the second. There should be 8 lines numbered 0 to 7, but line 2 is missing. This is the line which gives the code for "Off at CR" for extended sequence. If you set the code to Y before saving, it is OK. Perhaps this is the reason for "FAIL" in the PrinterEd?

(I have experimented with this, and found that if you insert the missing line in PipeDream and re-save the file, you can then load this back into the PrinterEd and -so far at least - update the PrinterEd without getting FAIL. As I use a variety of different PrinterEd files for different printers, I have modified all my PrinterEd files in this way, and so far have yet to have another FAIL, which previously was quite common. - Roy)

Another point with printer drivers - I used to enter them using characters between quotes, which is easier than using ASCII codes with some printer manuals. If you <>KILL such a driver, and then go to [J]E again, you will notice that your PrinterEd has reloaded with the characters translated to ASCII codes, and any spaces are omitted.

M. W. Hey (0703)

Here is the answer to Mark Ambrose's plea for an interactive character editor (see Z88 EPROM, Sept/Oct 1989). There are already two available through the Club Software Library. Z048 allows you to design characters on screen (and enables you to invert, reverse and otherwise modify them). The program generates the VDU codes for inclusion in your own programs. There is also a short demonstration program which illustrates various techniques for using graphics characters. Z066 (by Simon Phipps) not only generates the VDU codes, but also writes them into the lines of a BASIC program. It comes with sample character sets which can be used in BASIC and zBASE programs. These programs are available from Ian Braby, the Club Software Librarian. If anybody is puzzled by user-defined characters or windows in BASIC they can write to me for help (see Helpline!).

J. Drozd (0842)

How can I transfer text files between my Z88 and my Amstrad CPC 6128? I would like to transfer files to:

- a) Store and archive them on my 3" CPC disks; and
- b) edit and process the text on my CPC with a suitable CPC word processor. Can I use the C-Port IMPEXP-80? If I can transfer files what would be the best word processor on the CPC to edit them? I can get a Prottext word processor which operates under CP/M, or would another package be better? Any help would be gratefully received. Would the whole process be easier if I used an Atari ST?

BASIC for Beginners Part Three

By Geoff Cooper (ex-CCL)

In this, the third of my articles on BASIC for the beginner, I shall look at data input in more detail, programming technique, the use of files and various other bits and pieces. There is a lot of new material this time so pay attention!

Let's start by looking at INPUT in more detail. We have already met the statement, INPUT:

```
INPUT A
```

We can input a list of several data items as follows:

```
INPUT AGE, NAME$, SALARY
```

We can include prompts as follows:

```
INPUT "Please enter age ",AGE," and name ",NAME$ "and salary  
",SALARY
```

You will note that BASIC starts each prompt on a new line. TAB can be used to reposition the cursor:

```
INPUT TAB(0,0) "Name",NAME$,TAB(0,20) "Age",AGE
```

TAB can also be used in PRINT statements.

There is a function GET which reads the next character typed by the user and places it in a variable. For example:

```
100 PRINT "Please enter your choice..."
```

```
110 CHOICE$=GET$
```

CHOICE\$ now holds the character which was selected.

GET would be useful if you were displaying many screens full of information, and wanted the user to be able to stop and start scrolling of the text at the end of each page. Alternatively the user can press and release <SHIFT> whilst <> is held down to control scrolling.

INKEY and INKEY\$ serve similar functions, but wait only for a limited period of time, returning -1 (in the case of INKEY), or a null string (in the case of INKEY\$) if no key is pressed within that period.

WAIT=10

CHOICES\$=INKEY\$(WAIT)

- will cause the computer to wait for (WAIT * 10) ms

So if WAIT is 10, then the computer will wait for:

(10 * 10) ms

= 100 ms

= 0.1 s

The READ statement is used in conjunction with the DATA statement. I shall use an example to explain its workings:

```
10 RESTORE
```

```
20 DATA PARTA,20,PARTB,30,PARTC,40,END,0
```

```
30 INPUT "Please enter part",part$
```

```
40 REPEAT
```

```
50 READ list$,cost
```

```
60 IF list$=part$ THEN PRINT "The cost of this part is ",cost
```

```
70 UNTIL list$=part$ OR list$="END"
```

```
80 IF list$="END" THEN PRINT "Sorry - this part was not found"
```

RESTORE will cause the program, next time it encounters a READ instruction, to return to the first item of DATA in the program.

```
RESTORE 10
```

will cause the program to start any subsequent READ from line 10, or the next line which contains a DATA statement.

FILES

It is time we looked at the facility in BASIC of storing data within "FILES" for subsequent input to a program.

Try the following program:

NB: do not confuse 0 (zero) and O (the letter).

```
NEW
```

```
10 count=0
```

```
20 CLOSE#0
30 O=OPENOUT "RESULTS"
40 REPEAT
50 INPUT "Please enter student name...",NAME$
60 INPUT "Please enter mark...",MARK
70 PRINT#O,NAME$,MARK
80 count=count+1
90 UNTIL NAME$="" OR count=30
100 CLOSE#O
```

To finish entering data just press <ENTER> twice, without any data.

CLOSE#0 in line 20 ensures that all files are closed. Were we to escape from this program before it had run to completion, then the file RESULTS would be left open, and we would obtain an error on running the program a second time. Line 20 will allow for this. CLOSE#O in line 100 closes just this file. The letter O is the "CHANNEL" by which we read from and write to this file. Any letter would do - I chose O for output.

PRINT# is similar to PRINT, except that the item to be printed is written to the file whose channel follows it (and is not displayed on the screen).

Now, here's a program to read our data file:

```
NEW
10 CLOSE#0
20 I=OPENUP"RESULTS"
30 REPEAT
40 INPUT "Please enter student name...",NAME$
50 REPEAT
60 INPUT#I,STUDENT$,MARK
70 IF STUDENT$=NAME$ THEN PRINT "Mark is...",MARK
80 UNTIL EOF#I OR STUDENT$=NAME$
90 CLOSE#I
```

```
100 IF STUDENT$ <> NAME$ THEN PRINT "Not found"
```

```
110 UNTIL NAME$=""
```

To exit, press <ENTER> without typing in any name.

Note that as we read in each name from the file, we store it in a variable STUDENT\$. Provided the variable we are using is of the correct type, in this case a string variable, it does not matter what we call it.

<> means "is not equal to"

(< means "is less than" and > means "is greater than")

```
UNTIL EOF#1
```

- means until we reach the end of the input file.

If the file we are attempting to open cannot be found, then the file handle will return the value 0 i.e.:

```
PRINT I
```

will give:

```
0
```

There is far more to files than I can describe in one article. I recommend reading of the M-TEC BASIC reference manual (see the front of your Z88 user guide).

Now for some advice on debugging methods and good programming style.

TRACE

Try typing:

```
TRACE ON
```

before running a program.

As each line is executed, the line number is displayed. This can assist in debugging (identification of errors).

Cancel this with:

```
TRACE OFF
```

We can include statements within the program at various points to PRINT the value of any variables which might be of interest to us, in order to

check for the correct functioning of our program. These can be taken out later on.

We have made much use of GOTO. This is bad technique. BBC BASIC has the facility of a PROCEDURE which allows for easier to follow and better designed programs.

Again I will use an example to demonstrate. Many programs start with a menu similar to this:

NEW

10 DEF PROCmenu

20 REPEAT

30 PRINT "1 Enter new student details"

40 PRINT "2 Search for a student"

50 PRINT "3 EXIT"

60 INPUT "Please enter your choice..",CHOICE

70 IF CHOICE=1 THEN PROCnew

80 IF CHOICE=2 THEN PROCsearch

90 IF CHOICE=3 THEN PROCexit

100 UNTIL CHOICE>0 AND CHOICE<4

110 PROCmenu

120 DEF PROCnew

130 PRINT "NEW STUDENT - NOT DONE YET!"

140 ENDPROC

150 DEF PROCsearch

160 PRINT "SEARCH - NOT DONE YET!"

170 ENDPROC

180 DEF PROCexit

190 END

We could just as well have used GOTO's but the program would have been very difficult to follow or debug.

Note that in programming we always tackle problems in a step-down manner. That is to say we divide our program up into "MODULES" which we explore in greater detail as we decide that the level of structure we have tackled so far is sound. We do not worry exactly how we are going to search for a student, or enter new student details, until we have designed and tested the logic of the menu. So our first attempt will resemble the program above, having no detail within the procedures.

Although there is no detail within our procedures, the program will work in a limited way. When we are happy with this, we consider each module within the program - for example our student searching routine. It does not matter that our program might be long and desperately complex. We know that our menu works, and we now work on our search without having to worry about the other functions of the program.

Our program should contain plenty of comments to assist the reader.

Anything after a REM (remark) statement is ignored by the computer:

```
10 REM *** STUDENT DATABASE BY GEOFF COOPER ***
```

```
20 PROC menu : REM ** DISPLAY THE MAIN MENU **
```

As we proceed with our program, our line numbers will need tidying up. We might find that we have:

```
100 ....
```

```
102 ....
```

and that we want to add 5 new lines between these two. We use:

```
RENUMBER
```

which will cause all lines to be renumbered in steps of 10.

ERROR HANDLING

By now you will have encountered numerous error messages. When ever an error occurs, a variable, ERR, will take on a value specific to the type of error.

Try:

```
PRINT 2/0
```

The computer cannot accept this as you are dividing by zero. It will tell you as much in the error message. Now try:

PRINT ERR

This gives 18. This corresponds to division by zero.

We can make use of this in our program:

```
10 ON ERROR PROCError
20 INPUT "Number...";N:PRINT 10/N
30 GOTO 10
40 DEF PROCError
50 IF ERR=18 THEN PRINT "Division by zero not allowed" ELSE END
60 REM *** MAKE SURE YOU GET THE PREVIOUS LINE CORRECT!
70 ENDPROC
```

This prevents our program from failing, indicates the problem to the user, and allows him to try again.

Note that pressing <ESCAPE> causes an error of sorts, which returns a value for ERR of 17. Note that had we not included ELSE END in line 50 then we would prevent the user from escaping from the program as any pressing of <ESCAPE> would have simply caused lines 40 to 70 to have been executed. Needless to say I forgot when I tried it on my Z88 - now where's that paper clip got to?

Software Review - Harvester Wordchip

By M. W. Hey (0703)

This is a review of the Wordchip spelling checker from Harvester Information Systems. This is the mark two version, released in September 1989 which replaces the version that has been on sale since the Spring (and which was reviewed in **Personal Computer World** magazine).

The new improved Wordchip is a great improvement over their earlier effort, and Harvester say they are willing to do an exchange with anyone who is suffering with the old version.

It seemed natural to compare the Wordchip with the other Z88 spell checker the Computer Concepts Spellmaster. I have version 1.05 (10 August 1989) and holders of earlier, buggier versions can have that

exchanged by sending it back to Computer Concepts. That much the two packages have in common!

The Harvester Wordchip is grandly described as providing "Enhanced Word Processing with the Z88". This is not quite how I would describe it, though it does check Pipedream files. It also checks the spelling of single words, and has a "mini crossword solver". On opening the box you find a ROM card and a small leaflet. There is not much to read, and the instructions enclosed with the review ROM were out of date anyway, so I shall not mention them further.

Upon fitting the ROM in the Z88, Wordchip is selected by pressing [JW]. The Main Menu has three options :

1 Check Pipedream File, 2 Check Spelling, 3 Mini Crossword Solver

which are selected with the cursor keys + ENTER or by entering 1, 2, or 3.

To check a Pipedream file you save the file, select Wordchip, press "1", give the name of the file, and away you go. Wordchip opens the file and goes through it stopping when it finds a word that it does not recognise. Unlike Quickedit the Wordchip does not offer a text editor - it works directly upon the file held in :RAM.whatever.

It is quite fascinating to watch it work because each line is displayed and each word highlighted in turn. When an unknown word is found the program stops and you are offered various courses of action. This is a bit Quickedit-like, except that the Wordchip does not pass over two letter words. The Spellmaster software ignores two letter words and so misses my own number one typing error (which is to miss the "h" out of "the"). Wordchip scores several Brownie points for this feature alone.

(When tackled about two-letter words a Computer Concepts* spokesman said that it is so that "post-codes are not regarded as spelling errors" - which must be Excuse of the Year; but I digress...)

Wordchip is also case sensitive: it will spot "cambridge" as an error, and suggests "Cambridge" as the correction. It will also object to abbreviations like "Mr" without the dot, and suggests "Mr." (as well as "Ms." and "Mrs." - it is not sexist either!). When an error is signalled you are offered a choice of actions (ignore the word, add to user dictionary, correct it yourself, etc. You signal your choice with either A,B,C (etc) as appropriate, or with 1,2,3 (etc.) This latter choice is not mentioned on-screen, which is a pity since I find the number keys much easier to use, being placed in a nice line on the keyboard. Like Spellmaster the Wordchip's spell-checking algorithm will

only find close matches to an incorrectly spelled word - more than one incorrect letter defeats them both.

Wordchip now has a User Dictionary (called USER.DCT) and unlike Spellmaster this does not have to be loaded - Wordchip merely opens it and uses it, or if it cannot find it, creates it. This is very useful as the built in dictionary has many omissions: "ROM", "EPROM", "Pipedream" and "Z88" are all flagged as errors. Once they are installed in USER.DCT there is no problem.

Now for a speed test. I have used this article as a test run: it is 1167 words long and contained 100 errors (all deliberately introduced). In both cases I started a new user dictionary. The results were:-

WORDCHIP 25 minutes

QUICKEDIT 12 minutes

Not only was Wordchip slower, but it played absolute havoc with punctuation, highlights (like bold and italic printing) and special Pipedream features like "@@T@@" which it should ignore. This is my biggest complaint - after checking a file it must be loaded back into Pipedream so that the bizarre collection of symbols and inverted characters can be painstakingly weeded out.

The second menu option on the Wordchip is Check Spelling. This invites you to type a word, and Wordchip checks to see if it recognises it. Like Wordfinder, the user dictionary is not checked so that "ROM", "EPROM", "Pipedream" and "Z88" are all signalled as errors. Unlike Wordfinder the suggestions for an incorrectly spelled word are strung out in a long line (instead of neatly in columns) which looks a real mess, but the words are in lower case (with capitals when needed) which I prefer to Wordfinder's all-capitals.

There is no way of browsing through the dictionary for a word you only half remember; you must make intelligent guesses until you are close (i.e only one letter out).

Like all Harvester's Z88 software Wordchip is incredibly noisy: it beeps at every opportunity. I have a headache this evening and all this bleeping is hurting my brain. (I have turned the sound off at the Panel now - that has shown it who's boss. I must remember to reinstate it!)

Finally, this Mini Crossword Solver. "Mini" is the operative word: it will only accept two missing letters. It is also extremely slow in action (inaction??). As an experiment I entered "??" to get a list of all the two letter words. Here is the list that was produced (after 76 seconds):-

ad am an as at ay AM AS be by do eh em er et ex El fa Fe go ha he hi id if
in is it KZ La Le me mu my no nu of oh on or ox pi re so to up us we xi ye

This is a fascinating collection. (Does anyone know what a KZ is?)

CONCLUSION: The Harvester Wordchip (mark 2) is a plain and simple spelling checker for the Z88. It has fewer bells and whistles (but more bleeps) than the Computer Concepts Spellmaster (viz. no anagram solving and less crossword cheating), but it is more thorough in the plain checking of typos, which is what many people will want. (After all, where is the satisfaction of completing a crossword if you required the help of a machine.)

The "user interface" could be further refined, but it is perfectly adequate now, and the Wordchip **never** crashed my Z88. The real failing, however, is the awful mess Wordchip can make of highlight codes and punctuation.

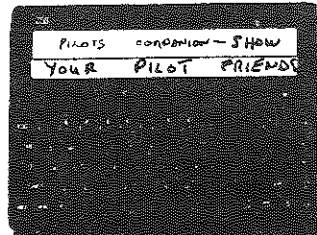
The Harvester Wordchip is available from Harvester Information Systems Ltd., Unit 1, Ealand Science Park, Wharf Road, Ealand, South Humberside. DN17 4JW. Rec. Retail Price £54.99

PILOTS COMPANION

Take this portable computer with you to plan flights.
Really easy & quick to use
FULL FEATURED FLIGHT PLANNER
INCLUDING U.K. AIRFIELDS, VOR'S & NDB'S
US & EUROPE AVAILABLE
RECALL YOUR OLD PLANS
IN FLIGHT FEATURES
INSTANT RE-RUNS
PAPER PRINTOUTS
HOSTS OF OTHER FEATURES
PLUS

Weight & balance
Check list generator
Descent rate calculator
Density altitude calculation

& if that is not enough all the regular features of the Cambridge Z88 a portable computer the size of a sheet of paper & 2 lb. in weight, runs on internal batteries
It has a WORDPROCESSOR, Program only £69 inc.
SPREADSHEET/DATABASE Program + computer £349 inc.
DIARY, Details from
CALCULATOR etc etc. PPL P.O. Box 4, MALVERN, WORCS.



TEL 0687 561985

TK

COMPUTERWARE

the Z88stockist

Tel: 0303-81-2801

RAM Packs:	32k	£20.00
	128k	£50.00
	512k	£200.00
EPROM Packs:	32k	£20.00
	128k	£50.00
COMPUTER:	Z88	£230.00
ADAPTERS:	- Amstrad PCW (C-Port Software)	£30.00
	- Archimedes	£35.00
	- BBC	£25.00
	- Macintosh	£60.00
	- Mains	£10.00
	- PC 2	£35.00
	- QL (BT connector Ser 1)	£25.00
	- QL ('D' connector Ser 1)	£27.00
SUNDRY:	Cambridge Topper	£8.00
	Carry Case	£10.00
	Centronics Interface	£30.00
	Disc Drive 3.5" battery powered with Interface	£250.00
	EPROM Eraser	£40.00
	Modem (Cambridge)	£170.00
	Modem Cable	£12.00
	RS232 Lead	£10.00

PHONE FOR DETAILS OF LATEST PRODUCTS

GAMES:	Scrazzble	Wordmongers	£20.00	
	Withered Toad	Wordmongers	£25.00	
TERMINAL:	Z-Term - General purpose	Wordmongers	£52.50	
GENERAL:	PipeDream - Archimedes	Colton	£114.00	
	PipeDream - PC (3.5"/5.25"d)	Colton	£114.00	
	PipeDream - PC Spell Checker	Colton	£50.00	
	SuperChip - ZTerm + ZTape	Wordmongers	£75.00	
	SuperChip1 - ZTerm, ZTape, Thinkz		£110.00	
	SuperChip2	Wordmongers	100.00	
	SuperChip3	Wordmongers	130.00	
	SuperChip4	Wordmongers	150.00	
	Spellmaster	Computer Concepts	£59.00	
	Spellmaster (USA version)	Computer Concepts	£59.00	
	T-Touch	S & S Computer	£40.00	
	zBASE	Wordmongers	£69.00	
	Z-Tape	Wordmongers	£52.50	
	Thinkz	Wordmongers	£52.50	
	BOOKS:	PipeDream	Dabs	£15.00
		Z88 Computing	Ian Sinclair	£10.00
Z88 Real Power Computing		F R Flaig	£12.00	
Z88 Reference Manual		M-Tec	£16.00	
Z88 Software Developers Guide		Camb. Comp.	£40.00	
Using Your Z88		Patrick Hall	£10.00	
Z88 Magic		Kuma	£16.00	

● ALL PRICES INCLUDE VAT AND UK MAINLAND DELIVERY - WE EXPORT WORLDWIDE ●

Phone for details of other products OR send SAE for our latest catalogue
Credit card phone orders accepted, or send cheques, postal orders, Eurocheques to:

**TK COMPUTERWARE, STONE STREET,
NORTH STANFORD, ASHFORD, KENT TN25 6DF**

TELEX
966876 PMFAB G



FAX
0303 812892



The
BBCBASIC(Z80)
Reference Manual
for the Z88

Now available;

the **BBCBASIC(Z80)** Reference Manual for the Z88

The subjects covered include:

General Information about **BBCBASIC(Z80)**

Assembler Language

Statements and Functions

The Screen Driver

The Operating System Interface

Printing

BBCBASIC(Z80) Files

Mathematical Functions

Error Messages and Codes

The Format of Program and Variables in Memory

Price £14.50 + £2.00 p&p

Available from **M-TEC**

ISBN No 1 871895 00 6

Z88 Magic

Written by the people who bought you Z88 Training Days, described recently as 'Splendiferous' by a reader in the September/October 89's issue.

This 300 page illustrated book covers all the Z88 Applications. There are lots of examples and an abundance of TIPS. These point you in the right direction and show you the pitfalls.

Although full of facts and instructions, this book is never dry. Humour is sprinkled throughout like gold dust!

Z88 Magic – Published by Kuma Computers ISBN No:
07457 0137 X

Price £14.95 plus £2.00 Postage and Packing.

Get your copy NOW by sending your cheque for £16.95
to:

Rakewell Limited

Denbigh House, Denbigh Road, Bletchley, Milton Keynes. MK1 1YP

Wordmongers

Wordmongers Limited

21 Edison Rd, Rabans Lane,
Aylesbury, Bucks. HP19 3TE.

Telephone: 0296 43 78 78

The Z88 Software House

EAzY Money: A zBASE application program

Would you like an eazy opportunity to keep track of your personal finance?

Would you welcome an eazy way to check bank statements?

How about tracking credit card expenditure?

All of the above and more is now eazily possible on your Z88.

EAzY Money is written in zBASE and stored on an eprom along with the zBASE runtime module. You do not have to buy zBASE to run EAzY Money. It is a self-contained system.

However, if you do have zBASE then the EAzY Money files can be accessed for additional processing.

Once the Bank account details are entered onto the accounts file, each cheque issued against that account is recorded and the expenditure allocated to an expenditure account. Similarly, as cash is spent, the CASH account gets depleted and the relevant expenditure account goes up.

When a cheque gets cashed, the bank account goes down by that amount and the cash account goes up. Its simple.

Whenever required, the transaction file can be cleaned up and reset. The bank, credit card and Cash accounts all retain the old closing balance as the new opening balance. The expenditure accounts are zeroed.

Reports available are

- Transaction file listing
- Accounts file listing
- Expenditure summary, by expenditure account
- Statements, for Bank, Credit card or Cash accounts

Tony

For more information -- Contact your dealer.

Directors: Tony Kaye BA MBA, Clive Salvidge BSc.
Registered Office: 151 Uxbridge Rd, London W13 9AU
Registered Number 1679977 London

S & S Computer Advice

8 Anchor Close, Hathern, Loughborough, Leics LE12 5HP

COUNTz

This new product is a timed survey program designed for pupil and teacher use and will survey up to 9 user defined headings against time. Summaries are available in printed and screen form for analysis. £25-00 inc vat and postage.

T-TOUCH The Typing Tutor for the Z88

A special course and software program for self-learning to touch-type on the Z88. Carefully planned and tested by experts in psychology, ergonomics and education. £39-95 inc. vat and postage.

FORM 7 Administrator

A suite designed for use with 'zbase' from Wordmongers Ltd that will enable primary school administrators to:-

1. Create a pupil database
2. Create a staff database
3. Create an examination database
4. Search each database to produce lists.
5. Produce Data for Form7.

£69-00 inc vat and postage.

SCHOOL Administrator

A Shortened version of the above, supplied on 32k eprom, for use by Secondary school Year Heads to keep track of student options and examination choices. this suite needs 'zbase' from Wordmongers Ltd. £39-95 inc vat and postage.

We can supply 'zbase' at £69-00 inc vat and postage.

Help

If you need it for your Z88 we can supply it.

Hardware. Software. Training. Advice.

All from:

S & S Computer Advice

The 'Z88 in education' specialists.

Tel. 0509 842670

"Z88 REAL POWER COMPUTING"

Is a 178 page, comb bound (flat folding), book, which explains in simple non technical language, simple methods and uses for the Z88 Cambridge Computer. None of the methods or uses described, briefly, as follows, involve the need for any extra software other than that supplied as part of the Z88 Computer, or included as part of the book. The only "program," as such detailed in the book to achieve the following applications, involves less than a hundred characters.

TWO separate METHODS OF MERGING documents (ie letters/reports etc) with your database. The first of these will enable you to achieve a global merge (the same letter/report to all your contacts). The second method allows you to browse through your database sending letters to some of your contacts, but not others. With this second method you can in fact have a SELECTION OF DIFFERENT LETTERS (suitable for accounts chasers), and you can also simply add in individual postscripts for each letter, or embed an individual piece of information in the text (in letters such as:- "I expect to be in your area next week, and expect to call on you on . . . Please phone myself or Mary at the office if this is not convenient, suggesting a different time." ; you may want to include "Tuesday at 9.30 am" etc).

Address LABELS (and product labels) can be produced with ease using the simple methods described in the book.

A simple method of formatting your display of database into a SCREEN DISPLAY is described, which allows you to use the whole screen to display a record. This obviates the problem of database elements trailing to either side of the screen, and the clutter of other lines / records of information. Records can be called on screen by name or number. Or you can pull all on to the screen in sequence backwards or forwards.

Detailed application examples include LANGUAGE CONVERSION (illustrating text manipulation), CURRENCY CONVERSION (allows conversion of any to any), TRIP CALCULATOR (estimate time of journey, fuel consumption, fuel remaining, and cost, etc), DIET CALCULATOR (estimate calories and costs), INVOICE GENERATOR (also useful for QUOTATIONS).

Other useful information contained in the book "Z88 Real Power Computing" includes an overview of software, with "get you going" advice on Basic programming, Diary, Pipedream (databasing and spreadsheeting), CLI, Filer, Print Editor, Calculator, Etc. And a review of add on products, further sources of information. Much general advice, including problem avoidance, and tips on the rudiments of typing/ keyboarding.

£9.95 Inc P & P

Readers Comments:- T.T of Glasgow, writes "....very interesting and enlightening... valuable explanation and description of the many ways of the Z88" D.T of Dyfed writes "Much better than the other books I have bought on the Z88. As someone who is such sore interested in using computers than the understanding of the way they work I found your book very practical and at the right pitch for my needs" A technical advisor for a computer manufacturer, in Cambridge, said in a phone conversation that the book Z88 Real Power Computing, is "full of good ideas and useful information."

Published by:

F. R. Flaig, Dept U2C, 105 Park Avenue, Broadstairs, Kent, CT10 2XL

Z88
REAL
POWER
COMPUTING

PipeDream

PipeDream is now available for the IBM PC and compatibles, and the Acorn Archimedes. It has been completely rewritten for these computers and contains many new facilities, whilst retaining complete file and keyboard compatibility with the Z88.

PipeDream on the PC or Archimedes makes the ideal companion for your Z88. With just a connecting lead and the PC LINK II EPROM you can load files directly from the Z88 filing system into PipeDream on the other computer and continue working with no loss of information. Now you can use PipeDream on the computer in your home or office as well as using it in the Z88.

New features of PipeDream on the PC and Archimedes include:

- ◆ up to 8192 columns and over 500,000,000 rows (depending upon your computer's memory size)
- ◆ mail-merge
- ◆ function keys
- ◆ complete keyboard reprogrammability
- ◆ foreign character editing and printing
- ◆ linking files
- ◆ financial functions
- ◆ database functions
- ◆ LOTUS file load and save
- ◆ user defined colour displays

PipeDream for the IBM PC and PipeDream for the Acorn Archimedes costs £99 + VAT.

For more information or to order PipeDream call us on 0954 211472 or write to us at Colton Software, Broadway House, 149-151 St Neots Road, Cambridge CB3 7QJ. Access and VISA telephone orders welcome.

PipeDream - power at your fingertips

*Does your Z88 lose its memory
in your briefcase overnight?*

Then order our unique, lightweight, protective
hard cover. Tried and trusted by Z88 users worldwide.
Send £7.75* to Wordworks Ltd (formerly A Gray).

*All inclusive. Europe £8.50, elsewhere £11 airmail. Dealer enquiries welcome.



Wordworks Ltd

49 OLNEY ROAD, EMBERTON, OLNEY, BUCKS, MK46 5BU

Want to get into print?

We'll tackle anything from forms, small ads, & leaflets
to manuals, reports and complete training packages.
Laser printing, typesetting and printing as required.
Wordworks Ltd: print, editorial & DTP consultancy.

Call us on 0234 713757

Software Review - "THINKZ"

by Michael W. Hey (0703), with technical assistance
from Bruce Knox (0874).

What is ThinkZ? Thinkz is the latest software application from Wordmongers - it intends to increase the usefulness of the Z88, and allows it to be used as a portable note-taker.

ThinkZ enables you to make notes under headings and elaborate on them as you go along. It provides a computerised alternative to the backs of old envelopes, so that ideas can be recorded as they occur and then duly elaborated upon in an orderly and structured fashion rather than being scribbled down all over the place with loopy arrows joining things together.

To enter ThinkZ press []O (O is for Organiser). The title screen asks you to select a name, which becomes the file-name used whenever your file is saved.

As an example, if I was invited to speak to the local Computer Society about the Z88 I would use ThinkZ to plan my talk.

First of all a rough outline is devised:-

Introduction.

Virtues of Z88 as a portable computer.

In-built software.

Third-party software.

Mass-storage media.

Benefits of joining the Z88 Users' Club.

Conclusions.

Then one elaborates on each main heading. For example, by choosing "Third-party software" and pressing <> down "Third-party software" is displayed in bold at the top of the screen, and further entries can be made underneath it, e.g. Databases, spelling checkers, typing tutors, games, Thought Organiser," and so on. Selecting databases, one could then press <> down and specify "Data Organiser, Z-Base", plus any others you may have.

Thus, by going through each of the major headings a well organised whole can be produced, set out rather like a family tree.

If one gets lost somewhere in the maze, pressing square-up returns you to the start.

The variety of uses for ThinkZ is limited only by the imagination of the user. It can be used for planning anything from sales campaigns to decorating the house, preparing shopping lists, planning articles and essays (this review was planned using ThinkZ). I am using ThinkZ to organise my campaign to save as many as possible of our remaining red telephone boxes. ThinkZ is useful in preparing anything which needs to be planned from the top downwards, starting with an outline, and progressing into greater and greater detail, and where you otherwise might be unable to see the wood for the trees.

How well does ThinkZ perform?

ThinkZ is quite easy to use. The instruction book is of Wordmongers' usual high standard, and because ThinkZ follows most of the well-established Z88 conventions (e.g. <>V for insert/overtyping, <>X for edit, and <>FS for file-save, etc.) you can manage quite well without reading it. There are one or two differences so I recommend reading the booklet.

The <>Z command marks a line with a sort of square bulls-eye. This is used for setting up links between lines so that the sideways cursor arrow will move between related lines. In the example above, "games" under "Third-party software" could be linked with games available through the Software Library. It is not possible to mark a block for moving and copying operations as in Pipedream: if you want text to appear twice it must be typed in fully twice.

There is no facility for sorting items into alphabetical order. This might be useful to anyone producing a really huge model. I have made enquiries, and Wordmongers tell me that it would be a very difficult feature to implement (though I hope they will try). Nor is it possible to print out part of a ThinkZ model (you have to go via Pipedream).

One interesting feature is the built-in musical instrument, included so that you can play little tunes while waiting for inspiration to strike. (Roy Woodward gave a spirited performance of "Doe, A Deer" on my Z88 one afternoon.) Sadly, it is not possible to make the CLI play "pre-recorded" selections.

Although ThinkZ is very useful it has one or two tedious properties. The screen can become rather cluttered with little arrows. Each line which has descendants is marked with a little arrow pointing down into a little box, each line that is linked has a little arrow with two heads and the current line is indicated by a pair of double-shafted little arrows. The effect looks like the aftermath of a battle with the Indians.

Unusually for Wordmongers' software there seem to be many rough edges. One feature allows you to rename a ThinkZ model, but due to a bug the new name becomes invisible. You cannot restore the old name (that is invisible, too), so you have a ThinkZ model with a blank title line. The moral is: choose your model name very carefully!

There is an instruction called `<>CLEAN`, which cleans up a ThinkZ model, and this can cause all sorts of dreadful things to happen.

Another bug sometimes makes lines vanish off the screen after editing. This is easier to cure - you go up a level in the hierarchy, and then back down, and the line reappears.

And another thing: sometimes the word DEL gets plonked into the OZ window (on the extreme right of the screen), and once there it appears in Pipedream, BASIC, the Diary, etc., and can only be banished by a reset! Judged on the strength of ThinkZ the authors might be better re-named Wordcobblers.

Not so much a bug as a curiosity, a sub-entry can be made to an empty line. There is nothing wrong with this, except that it is illogical and looks really odd!

When you open a new ThinkZ model ThinkZ creates three files, each bearing the name of the model with the extensions .DEL, .CDS, and .LNK - the terrible three! The .DEL file is continuously updated as you work, but the .CDS and .LNK are not. In order to operate correctly when ThinkZ resumes work on a file the three must tally in order that all the aforementioned arrows can be put back in the right place. If the .DEL file (containing the text) becomes orphaned then you are snookered. You are presented with the helpful message "Cannot find all files - Restore from your backup."

The problem gets a wee bit complicated because the three files do not appear together in the Filer, and the last updated times do not always match if they are catalogued.

I believe that the three files should be combined with the .CDS and .LNK information held as an "invisible" header (in the same way that Pipedream holds its Options information).

In my capacity as Chief Software Destroyer I had a go at editing the .CDS file. The results were a disaster: I urge you not to bother.

If the files do not match you get an interesting assortment of error messages, culminating with the ominous "Total failure - get expert help". In plain English this means your bugs have become totally gerred.

I telephoned and got a sympathetic hearing from a Wordmonger, but there was no way of retrieving my work! ThinkZ has a <>PD instruction which saves the contents of the .DEL file in Pipedream compatible format, and I found it best to do a <>PD every five minutes so that I did have some means of resurrecting my efforts after a bad crash.

A recovery procedure is required desperately. If things do go wrong you are left with the real potential of losing all your work, including the last back-up version, because loading the .DEL file into Pipedream gives you one great block of text. Sometimes the text is also lost, being largely replaced by question marks (rather symbolic, really).

CONCLUSION:

I have been using ThinkZ since July and I love it. It is terrifically useful to someone with a completely disorganised mind. I even use it for "flow-charting" BASIC programs. I consider ThinkZ a really good buy.

I keep Thinkz loaded in my Z88 so that as thoughts occur to me I can switch on and jot them down.

This might seem odd, because looking back over this review it seems to be a list of complaints!

My biggest disappointment with ThinkZ has been its "fragility". It has been responsible for more crashes and mid-air collisions than any other software I have used. It can be upset by so many little things, and once things have started to go adrift there is nothing you can do that will not make them worse.

Once the program has been given a thorough overhaul it will be yet another useful asset to the Z88 and a valuable tool for its users.

Thinkz is available from all good Z88 dealers, price £52.50.

Z88 Dealer List

AVON

K&K Computers Ltd
32 Alfred Street
Weston Super Mare
Avon
B233 1PU
0934 419124

Vickers Electronics
2 High Street
Chipping Sodbury
Bristol
Avon BS17 6AH
0454 322333

BEDFORDSHIRE

Gem Office Systems Ltd
3 Britanny Court
140 High Street Sout
Dunstable
Beds LU6 3HR
0582 603660

BERKSHIRE

M E Electronics
5 Hatherley Road
Reading
Berkshire RG1 5QA
0734 669512

BUCKINGHAMSHIRE

Softcentre
72a Friars Avenue
Aylesbury
Bucks HP20 2TB
0295 88948

CAMBRIDGESHIRE

Cambridge Microsurgery
Unit 4, 377b Cherry Hinton Rd
Cambridge
Cambs CB18 2J4
0223 410234

CORNWALL

Helston Computer Centre
Russell Knights Centre
Coinagehall Street
Helston
Cornwall
TR13 8EB
0326 563765

CUMBERIA

Cumbria Software Systems Ltd
Unit 3a Townfoot Ind Est
Brampton
Cumbria
CA8 1SW
0697 73779

DERBYSHIRE

Gordon Harwood Computers
69-71 High Street
Alfreton
Derbyshire
DE5 7DP
0773 836781

DEVON

Computerware
10 Lower North Street
Exeter
Devon
EX4 1ET
0392 210507

Micro Services
36 Crockwells Rd
Exminster
Devon
EX6 8DQ
0392 832179

Minerva Computers
67a Sidwell Street
Exeter
Devon
EX4 6FH
0392 410137

Henrycock Electronics
25/27 Station Road
Henrycock
New Cullampton, Devon
EX15 3SE
0823 680926

DORSET

Christopher Taylor Ltd
21 Market Place
Blandford Forum
Dorset
BH1 1RU
0258 452824

Landsdown Computer Centre
1 Landsdown Crescent
Bournemouth
Dorset
BH1 1RU
0202 765535

CO. DURHAM

Super User Bureau
The Auckland New Business Centre
St Helens Auckland
Bishops Auckland
CL14 9TX
0396 450610

G C Electronics
58 Derwent Street
Blackhill
Consett
DH8 8LP
0207 502249

ESSEX

Estuary Personal Computer
118 Charlwell North
Victoria Circus Shopping Centre
Southend on Sea
SSEX 5SR
0702 614111

GLoucestershire

Needforward Ltd
52 Pennysylvania Avenue
Hesterway
Cheltenham
Glocs GL51 7JP

HAMPSHIRE

Alec Roberts
26 High Street
Hythe
Southampton
Hampshire
SO4 6AH
0703 842282

Electronequip Computer System
59 West Street
Fareham
Hants PO16 0AT
0329 230670

P & H Electronics Ltd
14 Chinnam Centre
Basingstoke
Hants
0276 28588

Baytree Computer Centre
13 The Precinct
Waterlooville
PO7 7DT
0705 263084

HERTFORDSHIRE

H G Computer Services Ltd
Norman House
97-99 London Road
St Albans
Herts AL1 1LM
0727 30129

Karlit International Ltd
17 Bishops Close
Mays Lane
Arlesey
Barnet
Herts EN5 2QH
01 440 0803

Q TEK Systems Ltd
119 High Street
Stevenage
Herts SG6011
0438 360011

Watford Electronics
Jessa House
230 High Street
Watford WD1 2AGN
0923 37774

Entec

Spirilla Buildings
Bridge Road
Leitchworth
Herts
SG6 4EP
0462 677744

HUMBERSIDE

Tomorrow's World
Home & Business Computer Ctr
27/33 Paragon Street
Hull
Humber-side HU1 3NA
0482 24887

ISLE OF MAN

Aldridge Audio Ltd
54 Bucks Road
Douglas
Isle of Man
0624 21090

KENT

Computereyes
16 Starnes Court
Union Street
Maidstone
Kent
ME14 1EB
Maid. 51096

Computers Plus
65 High Street
Sittingbourne
Kent
ME10 4AW
0795 25677

Gravesend Computers Ltd
39 The Terrace
Gravesend
Kent
DA12 2BA
0474 323871

Lighthouse Computer Serv.
4 Park Avenue
Deal
Kent
CT14 9AL
0304 362049

Stanley Electronics
12 Colnsal Road
Swanley
Kent
BR9 9EZ
0522 64851

T K Computerware
Stone Street
North Stanford
Ashford
Kent
TN25 6DF
0303 812801

The Data Store
6 Chatterton Road
Bromley
Kent
BR2 9QR
01 460 8991

Nimbus Computing
6 Station Road
West Wickham
Kent
BR4 0PY
01 777 3160

CLI Library

by M. W. Hey (0703)

Here is a list of additional titles currently available in the Z88 Users' Club "CLibrary". Anyone wanting a copy of any of them should send either a cassette, disk, or EPROM with the correct amount of return postage and packing to me at this address: CLI library, 18, Woodside Road, Sandiacre, Nottingham. NG10 5GP.

X007 "Spooler.cli" by Simon Harrison (1207). The program is a multi-column Pipedream file into a single plain ASCII file without highlights, suitable for importing into other word processors. Such a program was requested in an early edition of **Z88 Eprom**.

X008 date.cli, by Dr R. Marsh. This routine prints the current date into Pipedream documents so that it remains constant (i.e. is not updated daily as with @@D@@). This routine also comes "free" with X002 (Function Keys).

X009 Suite of Programs to print Diary Amendments and delete the Diary Markers, by Dr Clifford Kay (1697). This utility allows you to mark selected items in your Diary and print them out on an Epson-compatible printer. (Approx 3k).

Finally, an apology for users of X002:- I have found that a rogue version of the program has escaped into general distribution. Line 60, which resets the screen so that it is completely filled by window 1 should read:

```
60 VDU1, ASC"6", ASC"#", ASC"1", 32, 32, 126, 40: VDU1, ASC"2",  
ASC"1", ASC"1": REM Window 1 fills screen.
```

Further contributions are always welcome, as are requests for help from baffled Club members. Please note that the only disk format I can accept is the 3.5-inch XOB type.

(In response to a couple of queries, perhaps I should point out here that the XOB disk format is not one on which I can supply programs from the main Software Library. - Roy)

More CLI's next time....

Small Ads and Swapshop

****FOR SALE****

Z88 WITH 512K RAM, TWO 128K EPROMS, DATAFLEX POCKET MODEM 1200 BAUD, STOPWATCHES, COMM88 V2, ALL POSSIBLE CABLES, CARRYING CASE, EPROM ERASER. £395.00 THE LOT - NO SPLITTING, NO HAGGLING. ROGER (0491) 38013 (WALLINGFORD, OXON), PREFERABLY 8.30-12.30AM, OR GOLD 81:TAN3002.

****FOR SALE****

Z88 COMPUTER (HARDLY USED, < 6 MONTHS OLD), 2 X 32K EPROMS, 128K EPROM, 512K RAM, PC LINK, PARALLEL PRINTER LEAD, EPROM ERASER, COST £500+ SELL GENUINELY FOR £350. PHONE RUSSELL ON (091) 3830127.

****WANTED****

GOOD WORKING 32K EPROM AND Z88 SERIAL CABLE. PHONE PASCUAL ON NORWICH (0603) 250479.

****FOR SALE****

ONE (NEW) SURPLUS COPY OF "USING YOUR Z88" BOOK - £6.00 INCLUDING POSTAGE. PHONE PHILIP ON (0274) 872350.

****EXCHANGE****

ZTAPE COMPLETE FOR ONE 128K OR TWO 32K EPROMS. PHONE TED ON (0992) 583202

****FOR SALE****

Z88 COMPUTER, MAINS ADAPTER, PC LINK II, 512K RAM, 128K EPROM, EPROM ERASER, SERIAL CABLE, CARRY CASE, TOPPER, "USING YOUR Z88" BOOK, ALMOST UNUSED. COST £538.65. ALL FOR £320 ONO. PHONE NICHOLAS ON 01 352 6350.

****FOR SALE****

Z88, EXTRA 32K RAM, APPLE MAC LINK, MAINS ADAPTER, SERIAL LEAD - £200 ONO. PHONE JOE ON (0604) 233642.

****SHOW****

8-BIT MICRO SHOW AT THE TAMWORTH ARTS CENTRE - SUNDAY 26TH NOVEMBER AT 10 AM - ADMISSION 75p. Z88 FEATURED

****CONTACT****

I AM VERY INTERESTED IN CONTACTING FELLOW USERS OF A Z88/PCW COMBINATION. PLEASE WRITE TO STEVEN BAILEY, 37 DALEHAM MEWS, BELSIZE PARK, LONDON. NW3 5DB.

****WANTED****

FOR PRIVATE COLLECTION - ANY OLD SINCLAIR PRODUCTS UP TO ZX80. HAS ANYONE GOT A BLACK WATCH? WRITE TO ROY AT CLUB ADDRESS ON PAGE 2.

NEXT ISSUE OUT END OF DECEMBER

ALL CONTENTS (C)1989 Z88 USERS' CLUB

ALL TRADEMARKS ACKNOWLEDGED

Z88 EPROM is printed on recycled paper.

DO YOU USE A Z88? WIN A BOTTLE OF CHAMPAGNE!

We're interested in you. If you have a particularly unusual / novel / interesting use for your Z88 we would like to hear from you. Write to us describing how you use your Z88 in no more than 300 words.

If we choose to publish your story (with your permission) then you will receive a bottle of champagne - personally signed by Sir Clive Sinclair.

Please send details to:

Janice Straitte
Nichols MacOmish PR
4 Downing Street · Farnham
Surrey GU9 7NZ
Telephone: (0252) 737676
Fax: (0252) 722980

EPROM SATELLITE SPECIAL

At last it's here!

A one-off special edition of Z88 EPROM, devoted entirely to the subject of Satellite Television.

Topic covered include:

- Full channel update, including the current position with the delayed BSB plans.
- In-depth review of CCL Satellite Receiver.
- DIY fitting instructions with practical hints and tips.
- How satellite TV works

Price: £1.50 (UK) or £2.00 (overseas)

**Please send cheque/p.o. made payable to
"Z88 Users' Club" to:**

**Z88 Users' Club, 68 Wellington Street,
Long Eaton, Nottingham. NG10 4NG**